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ABSTRACT

This commentary on innovations in language instruction developed at the State University of New York at Stony Brook examines how German is taught with the aid of a computer. The article describes selected features of the introductory German course, including (1) computer-assisted instruction, (2) programed language laboratory manual, (3) study guide, (4) recitation sessions, (5) the "Guten Tag" television series, and (6) a mini-course in linguistics. (RL)

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The Stony Brook CAI Program

State of the Art - 1972

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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After presenting the usual fascinating statistics about the glorious accomplishments of our Elementary German students who participated in our first controlled CAI experiment, I was asked to what extent the Hawthorne Effect was responsible for the results. I was unable to answer the questions because 1) I had never heard of the Hawthorne Effect and 2) I wouldn't have known how to carry out a careful experiment in the first place. Since then I have discovered that the Hawthorne Effect has something to do with the initial enthusiasm generated by a new device (or toy as we call our gadget), that students are very blasé about machines (although visiting firemen are always extremely excited, sometimes threatened and very much affected Hawthorne-wise) and I still don't care much as long as the results are there.

When one discusses anything related to computer technology it is quite important to sort out the various meanings of the word "program." We have a German program at Stony Brook that consists (on the elementary level) of computer assisted instruction, a programmed language lab manual and study guide, recitation sessions, the "Guten Tag" television series and a (plenary session) adjunct taught by a linguist. The text, or programmed language lab manual and study guide, is "programmed" in the "programmed materials" sense. There is some sort of a "program" in the computer sense that is employed by our colleagues in the Instructional Resources Center. I have no idea what they do and since I do not understand them I regard them with suspicion, especially when they start talking disdainfully about "natural language" as opposed to Fortran, Snowball, Coursewriter, etc. Suffice it to say that I know nothing about computers and machine costs. I am concerned only with what works and what seems to work for us. And this leads to my first warning to the profession: Everything that you hear from me will ultimately derive from an ill-concealed attempt to glorify my work. Rarely have I heard a new used-car owner boasting

over a boiler-maker about how he got "ripped-off." And rarely have I heard a paper read at a conference extolling the faults, flaws and negative results of the reader's life's work.

Our program at Stony Brook has been eclectic. We have not stated behavioral objectives and then systematically developed it. We have felt a need here or there and have attempted to meet that need. In many cases we have been forced to justify our program ex post facto. In Chicago at the 1st ACTFL meeting we presented a film showing students at work with CAI and enthusiastically presented positive results of our testing. The real reason for developing the program in CAI-German, however, was that IBM asked us if we were interested and it sounded fun. That the results were pedagogically positive was a bonus. My colleague, John Russell, has repeatedly attributed our success to massive indifference on the part of our colleagues. Since he and I have alternated as coordinators of the elementary German course, since he and I co-authored the CAI program (I mean "content") and since he and I co-authored the programmed text and lab manual, we are very much in favor of our program. Since he and I have shared the chair over the past several years, we have had a great deal of "cooperation." Our program works well for us. My second warning to the profession: Whatever works for us will probably not work for you.

Perhaps you have noted a touch of cynicism in my remarks. This is a direct result of a conversation with a colleague of mine which took place just as I sat down to type this paper. He responded to my query about what I should talk about this time by stating: "Use individualization as a leitmotiv. That's in this year."

I have assumed that my colleagues on this panel will discuss the type of machinery involved and the capabilities of that machinery. It is my understanding that we are all using essentially the same equipment and that we

differ only in our approaches to the curriculum. Cecil Wood, who was my "Doktorvater" and therefore has every right to do so, has questioned our program. (Our differences might serve as a profitable point of departure in the discussion period to follow.) The equipment, our types of drills and the role of CAI in the Stony Brook program have been discussed elsewhere. Instead, then, of iterating and reiterating, I beg your indulgence and give you some references to peruse at your leisure.

Our program began as an experimental self-study program carried out by volunteers in 1965. The results of the early program and the genesis of the Stony Brook program are discussed in an article in the January 1968 German Quarterly, modestly entitled "A Type of Computer-Assisted Instruction" (as if CAI were ubiquitous). Between 1965 and 1968 we explored the feasibility of CAI and were so impressed (the Hawthorne Effect had not yet worn off) that we incorporated it into our "normal" elementary German track. The role of CAI as we envisioned it then (and as we still see it) is discussed in the Modern Language Journal of March 1970 in an article presumptuously entitled "Towards Structured Foreign Language Study: An Integrated German Course." (This was our behaviorist period.) A view of the machinery and the students working at the terminal is presented in the Northeast Conference film, succinctly titled "Sight and Sound." The role which might be played by the Stony Brook Program in individualized instruction is discussed in the Northeast Conference Reports of 1971 in a chapter ostentatiously entitled "Innovative Trends." And finally a somewhat cynical discussion of the program was presented last year at the AATG in Chicago. The paper, available through the ERIC Clearinghouse, is mysteriously entitled "Consistency, the Hobgoblin of the Petty Mind or In Support of Eclecticism." As you can see we, in our thinking, have gone from humility through presumption and ostentation to mystery. For those of you interested in a more

concise and less ambiguous (although now somewhat dated) commentary on the state of the art in CAI, James Dodge's summary in Volume 1 of the Britannica Review of Foreign Language Education, "Machine Aided Learning," is very helpful. Pages 335-338 are devoted to CAI.

I think the title of Jim Dodge's article is most interesting: "Machine Aided Learning." We are all somehow aware now that languages are not really taught but are somehow learned through this mysterious and seemingly uniquely human ability to internalize "rules." The one prerequisite for this learning experience is verbal intercourse between human beings, with one set of human beings being the linguistic catylist for another. No machine can do this. Those of you who are afraid of being replac-d by a machine need not fear. You are unique. Unfortunately some language teachers can be replaced by machines, but it would be useless to warn them here, because they are not here. In all fairness, many of them are probably at other conventions since they were probably drafted to do German anyway.

We use CAI essentially as a paper grader and test giver. Our students are not given conventional homework assignments but are asked, instead, to do rather conventional exercises at the CAI terminal. This activity is time saving in two respects: student homework is graded (by machine) item by item so that a student may profit immediately from his performance and proceed from a correct (or corrected) reference rather than on an error. The time we save, as "teachers", is obvious if you consider the amount of time you devote to grading homework and testing.

The one question that we did ask ourselves while developing our program was "What can we as human beings do and how can we have the time to do it?" The answer to the first part of this question was given above, we serve as catylists for learning. Because CAI provides the structure or the grammatical core of the course, we are left free to do the following: Native speakers are

thrown into the recitation sessions and told to do anything they want as long as it is in German. I know what you are thinking now, and you are right. He is doing it in German, however, and she has become a German major. (The French call it "mixing sweat.") I suppose this learning experience can also be classified under the currently fashionable rubric, "culture" with a small "c".

Our CAI exercises are what one would call in the popular jargon "high cognitive." Students study "grammar" prior to performing at the terminal. What they do is very traditional, but since the machines can't teach them language, they might just as well be employed teaching them something about language. I am not a native speaker of German and therefore do not properly qualify for a recitation session. I am a linguist, however, and delight in talking about such things as conceptual structure and universal grammar. Therefore I have the privilege (and I enjoy it immensely) of teaching the plenary session which I see as a mini-course in contrastive structures and theoretical linguistics. I sincerely believe that this gaining of linguistic awareness is profitable to the student, although I confess that I blanch when I overhear students referring to German phonological rules as "freaky."

What reading and writing is done in our Elementary German course is done with CAI. As we have progressively diminished the classroom time devoted to reading and writing, our students have scored progressively higher in these skills on the Modern Language Association Cooperative test. This is not because CAI is a super device. They are learning more language in class and are doing the reading and writing with a rather unimaginative slave, CAI, anyhow.

We described the course structure for our integrated German program in the MLJ article as follows:

> "To restructure our beginning German course, we had to ask ourselves just how many hours per week we might lay claim to justifiably. Following the rule of thumb that it is reasonable to ask a student to do two hours of homework for each hour in class, we arrive at a

> total of nine hours per week involvement for the typical 3 hour . . . course. We used this number of hours in constructing our German course since we thought it was defensible and, more importantly, it gives promise of supplying guided instruction to the student whenever he is in contact with the target language."

The key word in this paragraph is guided. Note if you will the weekly breakdown of hours and the extent to which they are either structured and supervised on the one hand or, to use the old behaviorist description, "non-habit forming."

1. Four teacher contact hours consisting of one hour per week in plenary session and three hours per week in recitation. The objectives of these contact hours have already been described. It is in the plenary session that we show "Guten Tag."

2. Two language laboratory hours consisting of one hour per week in the conventional laboratory (two half-hour shots with programmed "soft ware") and one hour per week in the CAI lab.

3. In addition to the six "structured" hours listed above, student homework consists of the following. One hour per week devoted to the formal study of grammar using the programmed materials. One hour per week devoted to the traditional kinds of homework that language teachers will always feel obliged to assign. And one hour per week devoted to the study of German culture.

This constitutes a total of nine hours, the least structured of which is the one hour which we call "teacher's choice."

I would like to make the following observations. First of all, although we clearly have the most progressive and dynamic elementary German program in the country, attendance in the conventional lab is desultory in spite of the new materials and the mental activity the student must engage in. Secondly, the study of culture has been difficult to structure. We had envisioned a great many movies, assignments to watch TV programs, library research, etc.,

but we have been remiss. All this takes work. Thirdly, these are our materials and as a consequence they work well for us. And finally, our use of CAI in the total program is very clearly limited, a confession which I reluctantly make in a discussion of the "State of the Art in CAI." Perhaps this point is a valuable one. We set out to prove the feasibility of CAI in foreign language study, we had, to the best of my knowledge, the first foreign language course in the world in which CAI was an integral component (it has been in the course description in the undergraduate bulletin for several years) and finally we have grown tired. We look to you for more imaginitive programs. We look to experiments such as the one at Illinois for cost feasibility. And we look to the profession to reform its attitude regarding the value of research in pedagogy.

Now, after having played down the role of CAI in our program, I would like to review the kinds of things we ask our students to do at the terminal.

Our CAI program consists of 28 units, 14 units per semester. Units 7 and 21 are mid-term examinations and units 14 and 28 are semester final examinations. It is possible for us to shuffle the order of units in each quarter. For example the first-quarter units 1-6 (remember unit 7 is an exam) may occur in any order to suit the order of presentation of material in the classroom. My ap-logies for having given a false idea of what happens in the recitation sessions. The programmed lab manual and study guide (text) is used in conjunction with a teacher's text which contains "strongly recommended" lesson plans. How strongly we recommend following the teacher's text is inversely proportional to the instructor's academic rank and moxie and directly proportional to his hunger (for food).

Each unit contains six modules, the sixth module being a translation drill. Module 1 in each unit is a conventional substitution/transformation drill, module 2 is sentence ordering using numbered syntactic elements, and

modules 3 through 5 are further substitution/transformation drills and sentence expansion drills. This is all very traditional as I have previously stated. What is new, and I repeat myself, is that these modules are corrected item by item through the editing function of the computer and that the student may skip the remainder of the 10 item module by successfully completing 5 items consecutively.

Kinds of things which we have experimented with and would like to incorporate into our program are the following.

Diagnosis. It is possible to scan a linear string of "letters" to determine just where (grammatically) a student has gone wrong. A branching program can easily be built-in providing remediative explanation and supporting drills.

Audio Comprehension. We already have recording equipment at our disposal which can be employed in dictation exercises, audio comprehension drill and the like. The one short-coming involved here is the cost. The computer is "up" the entire time the student is at the terminal. It is not practical to use it as a tape recorder or page turner.

We are presently discussing an individualized contract German language study program at Stony Brook. Using CAI as a nucleus and as a guarantee (the computer never forgets) that a certain amount of work has been successfully completed, we see the possibility of sending our students to the CAI center to complete a certain amount of (always "A") credit work prior to entering advanced courses. Understandably this has met with serious objections on the part of our administrators who, like many administrators, have a bookkeeper mentality.

Well, perhaps our program is jazzier than we think. Perhaps the Hawthorne Effect has indeed worn off. In any case, I feel obliged to register my last warning: Please don't let happen to CAI what happened to the conventional lab.

Ours is a very personal program with a great deal of personal committment. We invite you to come see it, to steal it if you wish, but only you can make your program work.

In order for us to assert our relevance--indeed in order to survive, we like many businesses have been forced to diversify. In Germanic Studies we now offer strong concentrations in Yiddish and Swedish as well as a full program to the Ph.D. in German. We have finally instituted a course in the Germanic Heritage and are developing courses in conjunction with the Departments of Philosophy, History, and Political Science. We have finally recognized our role in the community and have incorporated graduate courses in Advanced Methodology and Contrastive Structures for our "market" of 300 German Teachers on Long Island. In addition we are offering gratis German instruction in the local elementary school.

This may appear irrelevant in a discussion devoted to the State of the Art in CAI. But now is a time for retrenchment, and that is the State of the Art in CAI at Stony Brook.